

STATEMENT OF BASIS

Southern Company Services Power Systems Development Facility

Wilsonville, Alabama
Shelby County
411-0023

This proposed renewal to the Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above-referenced applicant has applied to renew the existing Title V Permit, which was originally issued on October 27, 2003. The applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents, which were submitted on April 10, 2008, and March 16, 2009, and are attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Subsequent to the submittal of the Title V Major Source Operating Permit renewal application for the above-referenced applicant, several changes have been made at the facility. The Power Systems Development Facility (PSDF) was previously permitted as a research facility housing two independent advanced coal-fired power generation demonstration projects – the KBR Process and the Foster Wheeler Advanced Pressurized Fluidized Bed Combustor (APFBC). The PSDF has since taken the Foster Wheeler APRBC out of commission. The Combustion Turbine associated with this process, which was also utilized with the KBR Process when the Transport Gasifier was operating in Combustor Mode, has been sold and is scheduled to be removed from the property.

An addendum Title V Permit application, dated March 11, 2009, was received by the Department to include a Coal Drying Boiler System (CDBS) utilized within the KBR Process. The CDBS was permitted under Air Permit 411-0023-X003 on October 19, 2007. The baghouse associated with the KBR Process was decommissioned with approval from the Department on April 28, 2010. With the changes made to the PSDF facility as stated above, the following are the significant sources of air pollutants at the facility:

- Transport Gasifier
- Coal Drying Boiler System

The PSDF is a research facility hosting an advanced coal-fired power generation demonstration project called the KBR Process. The PSDF was designed at a scale sufficient to test advanced power system components and Clean Coal Technology Roadmap program elements in an integrated fashion to provide data for commercial scale-up. Research focuses on the testing the Transport Gasifier, a particulate control device (PCD), and other auxiliary systems.

Since operation of the PSDF is considered a research project, the operating hours are very low. Southern Company Services accepted permit limits for total 12 month

emissions to remain below 249 TPY for Nitrogen Oxides, Sulfur Dioxide, Carbon Monoxide, and Volatile Organic Compounds to avoid Prevention of Significant Deterioration (PSD) permitting. PSDF also requested a Particulate Matter (PM) limit of 99 tons per year to avoid non-attainment PSD New Source Review (NSR) for the addition of the CDBS. The limit of 99 tons per year was considered by PSDF because Shelby County is currently classified as non-attainment for PM (2.5).

Transport Gasifier

The KBR Process is an advanced pressurized circulation fluidized bed system designed to operate in air or oxygen-blown modes using a variety of fuels such as sub-bituminous, bituminous and lignite coals and biomass. Syngas derived in the Transport Gasifier is cooled and sent to a particulate control device (PCD) which removes virtually all the solids from the syngas. The filtered syngas is then sent to an atmospheric syngas combustor where it is combusted and all reduced sulfur compounds (H_2S , COS, CS_2) and reduced nitrogen compounds (NH_3 , HCN) are oxidized. The oxidized syngas, or flue gas, flows through a heat recovery boiler to produce steam before it travels out a stack. A slipstream of the gas from the PCD may also be utilized in the syngas cleanup testing unit and is then sent to the atmospheric syngas combustor. The gasification ash produced in this process is sent to a storage silo. Once this ash is conditioned by wetting in a mill it is sent to off-site disposal or is sent to the neighboring electricity generating plant for use as fuel.

The Transport Gasifier expected emissions and the associated standards are listed below. The KBR process includes a flare that is used during process upset conditions when the atmospheric syngas combustor can not accept the syngas and the syngas in the system is diverted to the flare.

Emission Standards

Opacity:

- The Transport Gasifier shall not discharge to the atmosphere more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall the emissions from the Transport Gasifier discharge a 6-minute average opacity of emissions greater than 40%. (ADEM Admin. Code r. 335-3-4-.01)

Particulate Matter (PM):

- The Transport Gasifier shall not discharge to the atmosphere PM in excess of that which is determined by the "Process Weight Equation". (ADEM Admin. Code r. 335-3-4-.03)
- The facility-wide total PM emissions, including the Transport Gasifier emissions, shall not exceed a 99 TPY. (ADEM Admin. Code r. 335-3-14-.05) Anti-NANSR.

Sulfur Dioxide (SO_2):

- The facility-wide total SO_2 emissions, including the Transport Gasifier emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-

14-.04) Anti-PSD.

Nitrogen Oxides (NO_x):

- The facility-wide total NO_x emissions, including the Transport Gasifier emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Carbon Monoxide (CO):

- The facility-wide total CO emissions, including the Transport Gasifier emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Volatile Organic Compounds (VOC):

- The facility-wide total VOC emissions, including the Transport Gasifier emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Expected Emissions

Particulate Matter (PM):

- During the last emission test (09/09), particulate emissions from this unit were 0.57 lb/hr which is below the applicable process weight limit. If operating at maximum hours (8760 hrs/yr) the emissions would be 2.51 TPY, which when added to the CDBS PM emissions is well below the facility-wide Anti-NANSR allowable of 99 TPY.

Sulfur Dioxide (SO₂):

- During the last emission test (09/09), SO₂ emissions from this unit were 27.88 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 122.12 TPY. These emissions, when added with the CDBS SO₂ emissions, are well below the facility-wide Anti-PSD allowable of 249 TPY.

Nitrogen Oxides (NO_x):

- During the last emission test (09/09), NO_x emissions from this unit were 21.57 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 94.5 TPY, which when added to the CDBS NO_x emissions is well below the facility-wide Anti-PSD allowable of 249 TPY.

Carbon Monoxide (CO):

- During the last emission test (09/09), CO emissions from this unit were 0.0 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 0.0 TPY, which when added to the CDBS CO emissions is well below the facility-wide Anti-PSD allowable of 249 TPY.

Volatile Organic Compounds (VOC):

- During the last emission test (09/09), VOC emissions from this unit were 0.07 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 0.31 TPY, which when added to the CDBS VOC emissions is well below the Anti-PSD allowable of 249 TPY.

Periodic Monitoring

A visual check of the emission stacks shall be recorded at least once per week while the Transport Gasifier is in operation and during daylight hours. Emission compliance testing shall be conducted for PM, SO₂, NO_x, CO and VOC once every two years. Consecutive tests will not be conducted sooner than eighteen months apart or later than thirty months apart unless approved by the Director.

Compliance Assurance Monitoring (CAM)

A Particulate Control Device (PCD) is utilized within the KBR Process system to remove particles from the syngas stream. The particles must be removed before being sent to an advanced gas cleanup system or cooled and then sent to the atmospheric syngas combustor. This PCD is an essential unit in this process system and is not operated in order to meet any applicable emissions limitations. No other control equipment is utilized within the system to meet any applicable emissions limitations; therefore, CAM does not apply to this unit.

Coal Drying Boiler System

The Cleaver Brooks Coal Drying Boiler System is utilized within the KBR Process in order to develop a reliable process for supplying a coal feed stock with reduced moisture content. This system is located in and around the coal structure. Milled lignite or coal at moistures of 37-50 wt% is conveyed at a wet throughput of up to 13,600 lbs/hr to a fluidized bed layer. A 10.22 MMBtu/hr hot water boiler fired with No. 2 fuel oil is the main source of heat for drying the lignite and coal. The boiler is a stand-alone source that was integrated into the existing coal preparation structural area and has its own stack.

The Coal Drying Boiler System expected emissions and the associated standards are listed below.

Emission Standards

Opacity:

- The 10.22 MMBtu/hr Boiler shall not discharge to the atmosphere more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall the emissions from the 10.22 MMBtu/hr Boiler discharge a 6-minute average opacity of emissions greater than 40%. (ADEM Admin. Code r. 335-3-4-.01)

Particulate Matter (PM):

- The 10.22 MMBtu/hr Boiler shall not discharge to the atmosphere PM in excess of that which is determined by the "Process Weight Equation". (ADEM Admin. Code r. 335-3-4-.03)
- The facility-wide total PM emissions, including the 10.22 MMBtu/hr Boiler emissions, shall not exceed 99 TPY. (ADEM Admin. Code r. 335-3-14-.05) Anti-NANSR.

Sulfur Dioxide (SO₂):

- The facility-wide total SO₂ emissions, including the 10.22 MMBtu/hr Boiler emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.
- The 10.22 MMBtu/hr Boiler shall not emit sulfur oxides, measured as sulfur dioxide, in excess of 1.8 lb/MMBtu heat input. (ADEM Admin. Code r. 335-3-5-.01)
- Sulfur content limit at 0.5% in fuel oil. (40 CFR §60.44c(g))

Nitrogen Oxides (NO_x):

- The facility-wide total NO_x emissions, including the 10.22 MMBtu/hr Boiler emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Carbon Monoxide (CO):

- The facility-wide total CO emissions, including the 10.22 MMBtu/hr Boiler emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Volatile Organic Compounds (VOC):

- The facility-wide total VOC emissions, including the 10.22 MMBtu/hr Boiler emissions, shall not exceed 249 TPY. (ADEM Admin. Code r. 335-3-14-.04) Anti-PSD.

Expected Emissions

Particulate Matter (PM):

- According to the Manufacturer's specifications, expected particulate emissions from this unit are 0.025 lb/MMBtu which is below the applicable 0.5 lb/MMBtu PM standard. If operating at maximum hours (8760 hrs/yr) the emissions would be 1.1 TPY which when added to the Transport Gasifier emissions is well below the facility-wide Anti-NANSR allowable of 99 TPY.

Sulfur Dioxide (SO₂):

- According to the Manufacturer's specifications, expected SO₂ emissions from this unit are 5.31 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 23.4 TPY which when added to the Transport Gasifier emissions is well below the facility-wide Anti-

PSD allowable of 249 TPY.

Nitrogen Oxides (NO_x):

- According to the Manufacturer's specifications, expected NO_x emissions from this unit are 2.56 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 11.3 TPY which when added to the Transport Gasifier emissions is well below the facility-wide Anti-PSD allowable of 249 TPY.

Carbon Monoxide (CO):

- According to the Manufacturer's specifications, expected CO emissions from this unit are 0.71 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 3.1 TPY which when added to the Transport Gasifier emissions is well below the facility-wide Anti-PSD allowable of 249 TPY.

Volatile Organic Compounds (VOC):

- According to the Manufacturer's specifications, expected VOC emissions from this unit are 0.26 lb/hr. If operating at maximum hours (8760 hrs/yr) the emissions would be 1.1 TPY which when added to the Transport Gasifier emissions is well below the facility-wide Anti-PSD allowable of 249 TPY.

Periodic Monitoring

Compliance with the fuel oil sulfur limits shall be demonstrated with certifications from the fuel oil supplier. The certifications shall include a statement by the facility's Responsible Official, certifying that the records of the fuel supplier certifications submitted represent all of the fuel oil combusted during the reporting period.

Compliance Assurance Monitoring (CAM)

No control equipment is utilized to meet any applicable emissions limitation and therefore, CAM does not apply to any pollutant emitted by this unit.



Adam G. Crocker
Energy Branch
Air Division

December 2, 2010
Date



MAJOR SOURCE OPERATING PERMIT

Permittee: **Southern Company Services**
Facility Name: **Power Systems Development Facility**
Facility No.: 411-0023
Location: Wilsonville, Shelby County, Alabama

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Ala. Code 1975, §§22-28-1 to 22-28-23 (2006 Rplc. Vol.) (the "AAPCA") and the Alabama Environmental Management Act, as amended, Ala. Code 1975, §§22-22A-1 to 22-22A-15, (2006 Rplc. Vol.) and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

*Pursuant to the **Clean Air Act of 1990**, all conditions of this permit are federally enforceable by EPA, the Alabama Department of Environmental Management, and citizens in general. Those provisions which are not required under the **Clean Air Act of 1990** are considered to be state permit provisions and are not federally enforceable by EPA and citizens in general. Those provisions are contained in separate sections of this permit.*

Issuance Date: *DRAFT*

Expiration Date:

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General Permit Provisos

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<p>1. <u>Transfer</u></p> <p>This permit is not transferable, whether by operation of law or otherwise, either from one location to another, from one piece of equipment to another, or from one person to another, except as provided in Rule 335-3-16-.13(1)(a)5.</p> <p>2. <u>Renewals</u></p> <p>An application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of this permit.</p> <p>The source for which this permit is issued shall lose its right to operate upon the expiration of this permit unless a timely and complete renewal application has been submitted within the time constraints listed in the previous paragraph.</p> <p>3. <u>Severability Clause</u></p> <p>The provisions of this permit are declared to be severable and if any section, paragraph, subparagraph, subdivision, clause, or phrase of this permit shall be adjudged to be invalid or unconstitutional by any court of competent jurisdiction, the judgment shall not affect, impair, or invalidate the remainder of this permit, but shall be confined in its operation to the section, paragraph, subparagraph, subdivisions, clause, or phrase of this permit that shall be directly involved in the controversy in which such judgment shall have been rendered.</p> <p>4. <u>Compliance</u></p> <p>(a) The permittee shall comply with all conditions of ADEM Admin. Code 335-3. Noncompliance with this permit will constitute a violation of the Clean Air Act of 1990 and ADEM Admin. Code 335-3 and may result in an enforcement action; including but not limited to, permit termination, revocation and reissuance, or modification; or denial of a permit renewal application by the permittee.</p> <p>(b) The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting</p>	<p>Rule 335-3-16-.02(6)</p> <p>Rule 335-3-16-.12(2)</p> <p>Rule 335-3-16-.05(e)</p> <p>Rule 335-3-16-.05(f)</p> <p>Rule 335-3-16-.05(g)</p>

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<p>or reducing the permitted activity.</p>	
<p>5. <u>Termination for Cause</u></p> <p>This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance will not stay any permit condition.</p>	<p>Rule 335-3-16-.05(h)</p>
<p>6. <u>Property Rights</u></p> <p>The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.</p>	<p>Rule 335-3-16-.05(i)</p>
<p>7. <u>Submission of Information</u></p> <p>The permittee must submit to the Department, within 30 days or for such other reasonable time as the Department may set, any information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. Upon receiving a specific request, the permittee shall also furnish to the Department copies of records required to be kept by this permit.</p>	<p>Rule 335-3-16-.05(j)</p>
<p>8. <u>Economic Incentives, Marketable Permits, and Emissions Trading</u></p> <p>No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.</p>	<p>Rule 335-3-16-.05(k)</p>
<p>9. <u>Certification of Truth, Accuracy, and Completeness:</u></p> <p>Any application form, report, test data, monitoring data, or compliance certification submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.</p>	<p>Rule 335-3-16-.07(a)</p>

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<p>10. <u>Inspection and Entry</u></p> <p>Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized representatives of the Alabama Department of Environmental Management and EPA to conduct the following:</p> <ul style="list-style-type: none"> (a) Enter upon the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept pursuant to the conditions of this permit; (b) Review and/or copy, at reasonable times, any records that must be kept pursuant to the conditions of this permit; (c) Inspect, at reasonable times, this facility's equipment (including monitoring equipment and air pollution control equipment), practices, or operations regulated or required pursuant to this permit; (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements. 	<p>Rule 335-3-16-.07(b)</p>
<p>11. <u>Compliance Provisions</u></p> <ul style="list-style-type: none"> (a) The permittee shall continue to comply with the applicable requirements with which the company has certified that it is already in compliance. (b) The permittee shall comply in a timely manner with applicable requirements that become effective during the term of this permit. 	<p>Rule 335-3-16-.07(c)</p>
<p>12. <u>Compliance Certification</u></p> <p>A compliance certification shall be submitted yearly no later than November 30th unless more frequent periods are specified according to the specific rule governing the source or required by the Department. The compliance certification shall cover the reporting period of October 1st through September 31st of each year.</p> <ul style="list-style-type: none"> (a) The compliance certification shall include the following: <ul style="list-style-type: none"> (1) The identification of each term or condition of this permit that is the basis of the certification; 	<p>Rule 335-3-16-.07(e)</p>

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<p>(2) The compliance status;</p> <p>(3) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Rule 335-3-16-.05(3) (Monitoring and Recording Keeping Requirements);</p> <p>(4) Whether the method(s) or other means used to assure compliance provided continuous or intermittent data;</p> <p>(5) Such other facts as the Department may require to determine the compliance status of the source.</p> <p>(b) The compliance certification shall be submitted to :</p> <p style="padding-left: 40px;">Alabama Department of Environmental Management Air Division P.O. Box 301463 Montgomery, AL 36130-1463</p> <p style="padding-left: 80px;">and to:</p> <p style="padding-left: 40px;">Air and EPCRA Enforcement Branch EPA Region IV 61 Forsyth Street, SW Atlanta, GA 30303</p>	
<p>13. <u>Reopening for Cause</u></p> <p>Under any of the following circumstances, this permit will be reopened prior to the expiration of the permit:</p> <p>(a) Additional applicable requirements under the Clean Air Act of 1990 become applicable to the permittee with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire.</p> <p>(b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans</p>	<p>Rule 335-3-16-.13(5)</p>

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<p>shall be deemed to be incorporated into this permit.</p> <p>(c) The Department or EPA determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.</p> <p>(d) The Administrator or the Department determines that this permit must be revised or revoked to assure compliance with the applicable requirements.</p>	
<p>14. <u>Additional Rules and Regulations</u></p> <p>This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.</p>	<p>§22-28-16(d), <u>Code of Alabama 1975</u>, as amended</p>
<p>15. <u>Equipment Maintenance or Breakdown</u></p> <p>(a) In the case of shutdown of air pollution control equipment (which operates pursuant to any permit issued by the Director) for necessary scheduled maintenance, the intent to shut down such equipment shall be reported to the Director at least twenty-four (24) hours prior to the planned shutdown, unless such shutdown is accompanied by the shutdown of the source which such equipment is intended to control. Such prior notice shall include, but is not limited to the following:</p> <p>(1) Identification of the specific facility to be taken out of service as well as its location and permit number;</p> <p>(2) The expected length of time that the air pollution control equipment will be out of service;</p> <p>(3) The nature and quantity of emissions of air contaminants likely to occur during the shutdown period;</p> <p>(4) Measures such as the use of off-shift labor and equipment that will be taken to minimize the</p>	<p>Rule 335-3-1-.07(1),(2)</p>

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<p style="text-align: center;">length of the shutdown period;</p> <p>(5) The reasons that it would be impossible or impractical to shut down the source operation during the maintenance period.</p> <p>(b) In the event that there is a breakdown of equipment or upset of process in such a manner as to cause, or is expected to cause, increased emissions of air contaminants which are above an applicable standard, the person responsible for such equipment shall notify the Director within 24 hours or the next working day and provide a statement giving all pertinent facts, including the estimated duration of the breakdown. The Director will be notified when the breakdown has been corrected.</p>	
<p>16. <u>Operation of Capture and Control Devices</u></p> <p>All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.</p>	<p>§22-28-16(d), <u>Code of Alabama 1975</u>, as amended</p>
<p>17. <u>Obnoxious Odors</u></p> <p>This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.</p>	<p>Rule 335-3-1-.08</p>
<p>18. <u>Fugitive Dust</u></p> <p>(a) Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.</p> <p>(b) Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne:</p> <p>(1) By the application of water any time the surface</p>	<p>Rule 335-3-4-.02</p>

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<p>of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;</p> <p>(2) By reducing the speed of vehicular traffic to a point below that at which dust emissions are created;</p> <p>(3) By paving;</p> <p>(4) By the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions; or</p> <p>Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.</p>	
<p>19. <u>Additions and Revisions</u></p> <p>Any modifications to this source shall comply with the modification procedures in Rules 335-3-16-.13 or 335-3-16-.14.</p>	<p>Rule 335-3-16-.13 and .14</p>
<p>20. <u>Recordkeeping Requirements</u></p> <p>(a) Records of required monitoring information of the source shall include the following:</p> <p>(1) The date, place, and time of all sampling or measurements;</p> <p>(2) The date analyses were performed;</p> <p>(3) The company or entity that performed the analyses;</p> <p>(4) The analytical techniques or methods used;</p>	<p>Rule 335-3-16-.05(c)(2)</p>

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<p>(5) The results of all analyses; and</p> <p>(6) The operating conditions that existed at the time of sampling or measurement.</p> <p>(b) Retention of records of all required monitoring data and support information of the source for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by the permit</p>	
<p>21. <u>Reporting Requirements</u></p> <p>(a) Reports to the Department of any required monitoring shall be submitted at least every 6 months. All instances of deviations from permit requirements must be clearly identified in said reports. All required reports must be certified by a responsible official consistent with Rule 335-3-16-.04(9).</p> <p>(b) Deviations from permit requirements shall be reported within 48 hours or 2 working days of such deviations, including those attributable to upset conditions as defined in the permit. The report will include the probable cause of said deviations, and any corrective actions or preventive measures that were taken.</p>	<p>Rule 335-3-16-.05(c)(3)</p>
<p>22. <u>Emission Testing Requirements</u></p> <p>Each point of emission which requires testing will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.</p> <p>The Air Division must be notified in writing at least 10 days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.</p> <p>To avoid problems concerning testing methods and</p>	<p>Rule 335-3-1-.05(3) and Rule 335-3-1-.04(1)</p>

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<p>procedures, the following shall be included with the notification letter:</p> <ul style="list-style-type: none"> a. The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests. b. A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedures requires probe cleaning). c. A description of the process(es) to be tested including the feed rate, any operating parameters used to control or influence the operations, and the rated capacity. d. A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances. <p>A pretest meeting may be held at the request of the source owner or the Air Division. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.</p> <p>All test reports must be submitted to the Air Division within 30 days of the actual completion of the test unless an extension of time is specifically approved by the Air Division.</p>	<p>Rule 335-3-1-.04</p> <p>Rule 335-3-1-.04</p>
<p>23. <u>Payment of Emission Fees</u></p>	
<p>Annual emission fees shall be remitted each year according to the fee schedule in ADEM Admin. Code R. 335-1-7-.04.</p>	<p>Rule 335-1-7-.04</p>
<p>24. <u>Other Reporting and Testing Requirements</u></p>	
<p>Submission of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require emission testing at any time.</p>	<p>Rule 335-3-1-.04(1)</p>

General Permit Provisos

Federally Enforceable Provisos	Regulations
<p>25. <u>Title VI Requirements (Refrigerants)</u></p> <p>Any facility having appliances or refrigeration equipment, including air conditioning equipment, which use Class I or Class II ozone-depleting substances as listed in 40 CFR Part 82, Subpart A, Appendices A and B, shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82, Subpart F.</p> <p>No person shall knowingly vent or otherwise release any Class I or Class II substance into the environment during the repair, servicing, maintenance, or disposal of any device except as provided in 40 CFR Part 82, Subpart F.</p> <p>The responsible official shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the US EPA and the Department as required.</p>	<p>335-3-16-.05(a)</p>
<p>26. <u>Chemical Accidental Prevention Provisions</u></p> <p>If a chemical listed in Table 1 of 40 CFR Part 68.130 is present in a process in quantities greater than the threshold quantity listed in Table 1, then:</p> <p>(a) The owner or operator shall comply with the provisions in 40 CFR Part 68.</p> <p>(b) The owner or operator shall submit one of the following:</p> <p>(1) A compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR Part 68 § 68.10(a) or,</p> <p>(2) A certification statement that the source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of the Risk Management Plan.</p>	<p>40 CFR Part 68</p>
<p>27. <u>Display of Permit</u></p> <p>This permit shall be kept under file or on display at all times at the site where the facility for which the permit is issued is located and will make the permit readily available for</p>	<p>Rule 335-3-14-.01(1)(d)</p>

General Permit Provisos

Federally Enforceable Provisos	Regulations
inspection by any or all persons who may request to see it.	
28. <u>Circumvention</u> No person shall cause or permit the installation or use of any device or any means which, without resulting in the reduction in the total amount of air contaminant emitted, conceals or dilutes any emission of air contaminant which would otherwise violate the Division 3 rules and regulations.	Rule 335-3-1-.10
29. <u>Visible Emissions</u> Unless otherwise specified in the Unit Specific provisos of this permit, any source of particulate emissions shall not discharge more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate emissions greater than 40%. Opacity will be determined by 40 CFR Part 60, Appendix A, Method 9, unless otherwise specified in the Unit Specific provisos of this permit.	Rule 335-3-4-.01(1)
30. <u>Fuel-Burning Equipment</u> Unless otherwise specified in the Unit Specific provisos of this permit, no fuel-burning equipment may discharge particulate emissions in excess of the emissions specified in Part 335-3-4-.03. Unless otherwise specified in the Unit Specific provisos of this permit, no fuel-burning equipment may discharge sulfur dioxide emissions in excess of the emissions specified in Part 335-3-5-.01.	Rule 335-3-4-.03 Rule 335-3-5-.01
31. <u>Process Industries – General</u> Unless otherwise specified in the Unit Specific provisos of this permit, no process may discharge particulate emissions in excess of the emissions specified in Part 335-3-4-.04.	Rule 335-3-4-.04
32. <u>Averaging Time for Emission Limits</u> Unless otherwise specified in the permit, the averaging time for the emission limits listed in this permit shall be the nominal time required by the specific test method.	Rule 335-3-1-.05

Summary Page for Transport Gasifier

Permitted Operating Schedule: 8760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
EP001	Transport Gasifier	NOx	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP001	Transport Gasifier	SO ₂	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP001	Transport Gasifier	CO	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP001	Transport Gasifier	PM	99 TPY (facility-wide)	Rule 335-3-14-.05 Anti-NANSR
EP001	Transport Gasifier	PM	$E = 1.38 (H)^{-0.44}$	Rule 335-3-4-.03(1)
EP001	Transport Gasifier	Opacity	(see general provisos)	Rule 335-3-4-.01
EP001	Transport Gasifier	VOC	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD

Provisos for Transport Gasifier

Federally Enforceable Provisos	Regulations
<p><u>Applicability</u></p> <ol style="list-style-type: none"> 1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits." 2. Where an applicable requirement of the Act is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions are incorporated as enforceable conditions of this permit. 3. This source has enforceable limits in place in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.05 "Air Permits Authorizing Construction in or Near Nonattainment Areas" and ADEM Admin. Code r. 335-3-14-.04 "Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]." 	<p>Rule 335-3-16-.03</p> <p>Rule 335-3-16-.05(a)(2)</p> <p>Rule 335-3-14-.04</p> <p>Rule 335-3-14-.05</p>
<p><u>Emission Standards</u></p> <ol style="list-style-type: none"> 1. Emissions exceeding any allowances that the source lawfully holds under Title IV of the clean air Act or the regulations promulgated thereunder are prohibited. 2. The product of hours of operation and acceptable emission factors for the Transport Gasifier and 10.22 MMBtu Boiler shall not total more than 249 tons in any consecutive 12 month period for either Sulfur Dioxide (SO₂), Nitrogen Oxide (NO), Carbon Monoxide (CO), or Volatile Organic Compounds (VOCs). 3. Particulate matter (PM) emissions from the stack associated with the Transport Gasifier shall not exceed the limit as set by the "Process Weight Equation" Rule 335-3-4-.03. PM emissions from the Transport Gasifier and Coal Drying Boiler System shall not total more than 99 tons in any consecutive 12 month period. 	<p>Rule 335-3-16-.05(d)</p> <p>Rule 335-3-14-.04</p> <p>Anti-PSD</p> <p>Rule 335-3-4-.03</p> <p>Rule 335-3-14-.05</p> <p>Anti-NANSR</p>
<p><u>Compliance and Performance Test Methods and Procedures</u></p> <ol style="list-style-type: none"> 1. Method 5 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the particulate matter emissions standard. 2. Method 9 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the opacity standard. 	<p>Rule 335-3-1-.05</p> <p>Rule 335-3-1-.05</p>

Federally Enforceable Provisos	Regulations
<ol style="list-style-type: none"> 3. Method 25a of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with VOC emissions standard. 4. Method 6c of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the sulfur dioxide emissions standard. 5. Method 10 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the carbon monoxide emissions standard. 6. Method 7e of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the nitrogen dioxide emissions standard. 	<p>Rule 335-3-1-.05</p> <p>Rule 335-3-1-.05</p> <p>Rule 335-3-1-.05</p> <p>Rule 335-3-1-.05</p>
<u>Emission Monitoring</u> <ol style="list-style-type: none"> 1. Sulfur Dioxide, Carbon Monoxide, Nitrogen Oxide, Volatile Organic Compound and Particulate emissions tests are to be conducted simultaneously on EP001 at an interval of once every two years. Consecutive tests will not be conducted sooner than eighteen months apart or later than thirty months apart unless approved by the Director. 2. The permittee shall perform a visual check of the emissions stacks at least once every seven (7) days while the gasifier is in operation and during daylight hours. If visible emissions are observed, the permittee shall investigate the cause and take the necessary corrective action. 	
<u>Recordkeeping and Reporting Requirements</u> <ol style="list-style-type: none"> 1. The permittee shall record the duration of operation for the transport gasifier and develop and submit a quarterly summary of emissions for each month of the quarter and for the previous 12 months based on the total number of hours of operation and acceptable emission factors. This report shall be submitted within 45 days of the close of the calendar quarter it represents. 2. The owner/operator shall record emission estimates during times of bypass and or malfunction. These estimates will be based on the best information available at the time of the upset. The record will contain, for each train, the date and times of each upset, the cumulative time of upsets, the emission factors used, and the cumulative emissions during upset for the transport gasifier. Emissions during upset will be included in the emissions report required by Recordkeeping and Reporting Requirements proviso No. 1. 	

Federally Enforceable Provisos	Regulations
3. The permittee shall maintain a record of all visible observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective action taken.	Rule 335-3-16-.05
4. All records will be kept in a format suitable for inspection for a period of at least five years.	Rule 335-3-16-.05

Summary Page for Coal Drying Boiler System

Permitted Operating Schedule: 8760 Hrs/yr

Emission limitations:

Emission Point #	Description	Pollutant	Emission limit	Regulation
EP002	Coal Drying Boiler System	NOx	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP002	Coal Drying Boiler System	SO ₂	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP002	Coal Drying Boiler System	SO ₂	1.8 lb/MMBtu	Rule 335-3-5-.01
EP002	Coal Drying Boiler System	CO	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD
EP002	Coal Drying Boiler System	PM	99 TPY (facility-wide)	Rule 335-3-14-.05 Anti-NANSR
EP002	Coal Drying Boiler System	PM	$E = 1.38 (H)^{-0.44}$ 0.5 lb/MMBtu	Rule 335-3-4-.03
EP002	Coal Drying Boiler System	Opacity	(see general provisos)	Rule 335-3-4-.01
EP002	Coal Drying Boiler System	VOC	249 TPY (facility-wide)	Rule 335-3-14-.04 Anti-PSD

Provisos for Coal Drying Boiler System

Federally Enforceable Provisos	Regulations
<u>Applicability</u>	
1. This source is subject to the applicable requirements of ADEM Admin. Code R. 335-3-16-.03, "Major Source Operating Permits."	Rule 335-3-16-.03
2. This source is subject to the applicable requirements of the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units found in Subpart Dc of 40 CFR Part 60.	Rule 335-3-10-.02(c) & 40 CFR PART 60 SUBPART DC
3. This source has enforceable limits in place in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.05 "Air Permits Authorizing Construction in or Near Nonattainment Areas" and ADEM Admin. Code r. 335-3-14-.04 "Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]."	Rule 335-3-14-.04
	Rule 335-3-14-.05
<u>Emission Standards</u>	
1. The product of hours of operation and acceptable emission factors Transport Gasifier and Coal Drying Boiler Sytstem shall not total more than 249 tons in any consecutive 12 month period for either Sulfur Dioxide (SO ₂), Nitrogen Oxide (NO), Carbon Monoxide (CO), or Volatile Organic Compounds (VOCs).	Rule 335-3-14-.04 Anti-PSD
2. The sulfur content of the distillate oil shall not exceed 0.5% by weight.	RULE 335-3-10-.02(c) & 40 CFR Part 60 Subpart Dc
3. Particulate matter (PM) emissions from the Coal Drying Boiler System and Transport Gasifier shall not total more than 99 tons in any consecutive 12 month period.	Rule 335-3-14-.05 Anti-NANSR
<u>Compliance and Performance Test Methods and Procedures</u>	
1. Method 5 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the particulate matter emissions standard.	Rule 335-3-1-.05
2. Method 9 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the opacity standard.	Rule 335-3-1-.05
3. Method 25a of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the VOC emissions standard.	Rule 335-3-1-.05

Federally Enforceable Provisos	Regulations
<ol style="list-style-type: none"> 4. Method 6c of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the sulfur dioxide emissions standard. The fuel oil sulfur content shall be determined by obtaining and maintaining fuel receipts from the fuel supplier that certify that the oil delivered meets the definition of distillate oil as defined in 40 CFR Part 60.41(c) or by fuel sampling and analysis each time fuel oil is added to the fuel oil storage tank. 5. Method 10 of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the carbon monoxide emissions standard. 6. Method 7e of 40 CFR Part 60, Appendix A shall be used in the determination of compliance with the nitrogen dioxide emissions standard. 	<p>Rule 335-3-1-.05</p> <p>RULE 335-3-10-.02(c) & 40 CFR Part 60 Subpart Dc</p> <p>Rule 335-3-1-.05</p> <p>Rule 335-3-1-.05</p>
<u>Emission Monitoring</u>	
<ol style="list-style-type: none"> 1. There are no source specific emissions monitoring provisions for this unit. 	N/A
<u>Recordkeeping and Reporting Requirements</u>	
<ol style="list-style-type: none"> 1. The permittee shall record the duration of operation for the Coal Drying Boiler System and develop and submit a quarterly summary of emissions for each month of the quarter and for the previous 12 months based on the total number of hours of operation and acceptable emission factors. This report shall be submitted within 45 days of the close of the calendar quarter it represents. 2. Records of vendor certifications that document the sulfur content of the fuel oil fired in this unit shall be kept on site in a form suitable for inspection for a period of at least five years from the date of generation. 3. Compliance with Proviso 2 shall be demonstrated with certifications from the fuel oil supplier. The certifications shall include the following: <ol style="list-style-type: none"> a. The name of the oil supplier; b. A statement from the oil supplier that the oil complies with the description of distillate oil as defined in 40 CFR 60.41(c); c. The date of the oil shipment; d. The sulfur content of the oil; e. A statement by the facility's Responsible Official, certifying that the records of the fuel supplier certifications submitted represent all of the fuel oil combusted during the reporting period. 	<p>Rule 335-3-14-.04 Anti-PSD/NANSR</p> <p>Rule 335-3-14-.04</p> <p>RULE 335-3-10-.02(c) & 40 CFR Part 60 Subpart Dc</p>

